ORIGINAL
FILE

RECEIVED
MAY 3 - 1991
Federal Communications Commission
Office of the Secretary

Before the
FEDERAL COMMUNICATIONS COMMISSION
Washington, D.C. 20554

In the Matter of	)	
	)	
Petition of	)	
	)	
AMERICAN PERSONAL COMMUNICATIONS	)	
For Amendment of the Commission's Rules	)	RM-_____
to Allocate Spectrum for Provision of	)	
Personal Communications Services ("PCS")	)	
and PCS Microwave, and to Create a New	)	
Subpart of the Commission's Rules to	)	
Authorize PCS As a New Service	)	

AMERICAN PERSONAL COMMUNICATIONS
PETITION FOR RULE MAKING

AMERICAN PERSONAL
COMMUNICATIONS

Jonathan D. Blake
Kurt A. Wimmer
D. Scott Coward

COVINGTON & BURLING
1201 Pennsylvania Avenue, N.W.
Post Office Box 7566
Washington, D.C. 20044
(202) 662-6000

Its Attorneys

May 3, 1991

Summary

In the 17 months since American Personal Communications ("APC") filed for the first experimental authorization for personal communications services ("PCS"), APC has garnered significant experience in engineering and configuring PCS systems. The Commission has received a broad spectrum of comment on the need for PCS. International development of PCS has proceeded apace. APC believes it is now appropriate for the Commission to launch a rule making proceeding to authorize a new personal communications service. Toward the end of moving PCS from an idea to an industry, this Petition proposes amendments to the Commission's rules and provides a new Subpart N of Part 22 to define and formally authorize PCS as a new service.

Based on its experience, APC recommends that the 1850-1990 MHz band be allocated to PCS and that the 37.0-39.5 GHz band be allocated to PCS microwave. These allocations should be made prior to determination of technical standards. APC's ongoing developmental work will be instrumental in the development of standards and interference criteria, and APC will file reports on these topics during the proposed rule making. APC proposes specific methods for resolving the limited interference conflicts that may arise between PCS licensees and microwave users. APC further recommends blanket licensing for base stations and, if the Commission agrees with this course, specific procedures for an expedited hearing process to license PCS applicants.

Contents

Before the
FEDERAL COMMUNICATIONS COMMISSION
Washington, D.C. 20554

In the Matter of	)	
	)	
Petition of	)	
AMERICAN PERSONAL COMMUNICATIONS	)	
For Amendment of the Commission's Rules	)	RM-_____
to Allocate Spectrum for Provision of	)	
Personal Communications Services ("PCS")	)	
and PCS Microwave, and to Create a New	)	
Subpart of the Commission's Rules to	)	
Authorize PCS As a New Service	)	

To: The Commission

AMERICAN PERSONAL COMMUNICATIONS PETITION FOR RULE MAKING

It is now 17 months since American Personal Communications ("APC")[1/] filed the first application for experimental personal communications service ("PCS") in this country[2/] and 10 months since the Commission issued a Notice of Inquiry concerning PCS.[3/] During those periods, APC has proceeded with that first and a second PCS experimental authorization, conducted extensive research on PCS technologies and market factors, entered into arrangements

---

1/ American PCS, L.P., d/b/a American Personal Communications.

2/ Station KF2XAW, FCC File No. 1321-EX-PL-90 (authorization to test PCS within the 900-901, 930-931, and 940-941 MHz bands), granted by the Commission on February 22, 1990. The Commission subsequently granted APC a second experimental authorization, Station KC2XDM (FCC File No. 1447-EX-PL-90), to test PCS within the 1850-1990 MHz band.

3/ See Amendment of the Commission's Rules to Establish New Personal Communications Services ("Notice of Inquiry"), General Docket 90-314, 5 F.C.C. Rcd. 3995 (1990).

with American equipment manufacturers, otherwise intensively pursued other PCS issues, and recently undertook the preliminary stages of its PCS propagation tests in the 1850-1990 MHz band.

Based on these efforts, APC believes there is now a sufficient body of knowledge to permit (i) tentative conclusions about key PCS issues and (ii) issuance of a PCS notice of proposed rule making. Further, APC believes that taking this step now is in the interest of the United States, which is on the brink of a magnificent but mercurial opportunity to take a leading international role in this new telecommunications technology.

Definition and scope of service -- APC's market studies, consumer welfare considerations, spectrum scarcity factors and international competitiveness considerations all make it clear that PCS should be broadly defined and that PCS operators should have the opportunity to provide the full range of services from second-generation cordless telephone ("CT-2") service to the far more sophisticated two-way voice services and data services encompassed by the PCS concept. A suggested definition for PCS is, therefore, provided below.

Spectrum allocation for PCS -- While other frequency bands might have some potential for possible PCS use, the most appropriate PCS allocation is 1850-1990 MHz. The available 900 MHz frequencies, while useful for APC's experiments, would provide insufficient capacity for full-scale PCS operations.

Other bands are already heavily occupied, used by the government,[4] or technically unsuited. The 1850-1990 MHz band should be used by PCS operators on a co-primary basis with existing private microwave users. If sharing cannot be accomplished on a non-interference basis, PCS licensees should reimburse existing microwave users for the reasonable costs of moving to other frequencies or modes of communication.

Technical design of PCS spectrum utilization -- The Commission should not straitjacket evolving PCS technology. But it is already clear, as APC has demonstrated, that in many major markets (and in smaller ones as well) PCS can co-exist with existing microwave users.[5] This is because, using existing time division multiple access ("TDMA") or code division multiple access ("CDMA") technology, PCS operators can readily engineer their services around the operations of existing microwave users. In some cases such sharing is possible because of a general absence of microwave operations in the market. In other cases that APC now has evaluated in

---

[4] While the pending Emerging Telecommunications Technologies Act of 1991 (H.R. 531, H.R. 1407 & S. 218) might ultimately make some of this spectrum available for private use, that process will take too long. The public wants PCS service now, and this country can ill afford to give other nations a head start in an arena of international competitiveness where we should be able to play a leading role from the outset.

[5] APC has demonstrated this to be the case in its January 28, 1991 report on its experimental authorization. See Letter from W. Scott Schelle to Dr. Thomas Stanley, Chief Engineer, Second Progress Report of American Personal Communications, & Table One (January 28, 1991).

detail, heavy microwave usage is concentrated in areas outlying the central community. In these cases sharing is obviously desirable, with PCS using the frequencies in the market's population core, because it increases the efficiency of spectrum utilization.

Different configurations of CDMA technology also may permit shared use by PCS with microwave users in the 1850-1990 MHz band. PCN America, Inc., a subsidiary of Millicom, Incorporated ("Millicom"), proposes that PCS use CDMA technologies in a 50 MHz RF channel, along with wide guard bands, to "overlay" microwave users.[6/] In contrast, APC has proposed a CDMA configuration involving narrower RF channels. In either configuration, APC believes there will be a need for protection around existing microwave users, by techniques that will be described below. Tests are being conducted to determine the merits of various approaches. But the rule making proceeding need not and should not be held up pending the results of these tests.

Interference issues -- Other participants in the PCS Inquiry have urged use of a market approach to interference and licensing issues.[7/] APC endorses the principle that PCS licensees should operate in the 1850-1990 MHz bands without

---

[6/] See Petition for Rulemaking, PCN America, Inc., a Subsidiary of Millicom, Incorporated, RM-7175 (November 7, 1989).

[7/] See Comments of BellSouth in PCS Inquiry (January 15, 1991); Comments of AT&T in PCS Inquiry (January 15, 1991).

causing interference to existing microwave users. Different solutions will be appropriate in different circumstances, and by and large, APC agrees that PCS licensees should reimburse microwave users for the reasonable costs of relocation when necessary. But APC does not support elevating these negotiations into a private-sector licensing process.

Spectrum allocation for PCS microwave -- New technologies and new equipment make it possible and economical for PCS to use the 37-39.5 GHz band for PCS microwave. Part of this spectrum is currently unused and can be used for PCS microwave immediately, and the remainder can be used for PCS microwave under existing rules or slight modifications of existing rules. The notice of proposed rule making should propose to allocate this spectrum for this purpose.

Licensing -- Blanket licensing for PCS base stations is clearly in the public interest, because it would save time and government resources, run no risk of permitting interference and provide maximum flexibility for adapting to changing local conditions and consumer needs.

More difficult is the question of how to select among PCS applicants. Lotteries are speculative, cause delays and are susceptible to horrendous abuses. Auctions are currently unauthorized by the Communications Act, also would not pick the best licensee, would discourage or shut out all but the largest companies and would lead to their own types of abuses. Conventional comparative hearings are too slow. APC

has proposed a number of specific, far-reaching reforms to the hearing process that would remedy these defects while ensuring the selection of the best possible PCS licensees in each market -- prohibiting pay-offs; imposition of substantial application and hearing fees; a mandatory settlement process; use of outside experts, and a requirement that the Commission issue a tentative but detailed evaluation of competing PCS proposals within 90 days of the application filing date. On this issue, the notice of proposed rule making should narrow the options, identify the considerations and ask for the public's input.

* * *

PCS issues have been raised before with the Commission, principally with respect to spectrum allocation questions. One petition has sought a general allocation of spectrum between 1.7 and 2.3 GHz for PCS;[8/] another has sought an allocation in the 940-947 MHz band for CT-2 service;[9/] and yet another has sought an allocation in the 1850-1990 MHz band exclusively for PCS data transmission.[10/]

[8/] See Petition for Rulemaking, PCN America, Inc., a Subsidiary of Millicom, Incorporated, RM-7175 (November 7, 1989). The petition noted that its general 1.7-2.2 GHz proposal was "not intended to be definitive" and urged the Commission "to consider allocation of all practical alternatives." Petition at 4.

[9/] See Petition for Rulemaking of Cellular 21, Inc., RM-7140 (September 22, 1989).

[10/] See Petition for Rulemaking of Apple Computer, Inc., RM-7618 (January 28, 1991).

These and other issues have been discussed in the Notice of Inquiry proceeding. None of these petitions has, however, put forward a firm proposal for specific frequencies, based on engineering analysis, with a concrete proposal for establishment of a new personal communications service.

Now the time has come for the Commission to tentatively resolve most of these matters and issue a notice of proposed rule making as to a few issues that should not be tentatively resolved at this time. The rule making can further narrow the issues so that they can be resolved in the course of the rule making proceeding. Accordingly, APC sets forth in Attachment A proposed amendments to the Table of Frequency Allocations, amendments to Part 22 of the rules, a proposed new Subpart N to Part 22 of the rules to establish PCS as a new service and establish basic operational and licensing parameters for PCS, and other proposed amendments. See 47 C.F.R. § 1.401(c) (1990).

I. DEFINITIONAL ISSUES

PCS encompasses a broad spectrum of wireless radiotelephone communication services permitting portable and inexpensive voice, data, and image transmission. It is critical that the entire family of PCS subsidiary technologies -- including CT-2, Enhanced CT-2, PCN, and other technologies that may evolve -- be provided by PCS licensees under the overall umbrella of the "personal communications service." To

that end, APC has proposed a new subpart of the Commission's rules to license PCS operators to flexibly provide all these services. See Attachment A.

PCS will share certain characteristics with cellular telephone service,[11] paging services,[12] cordless telephones,[13] and intelligent network telephone services,[14] but will constitute an entirely new

---

[11] Like cellular telephone, PCS will provide wireless, public voice communications and will employ frequency reuse technology via base stations configured in a grid system throughout a market. PCS will differ from cellular, however, in that its microcell technology -- permitting low-power microcells in relatively close proximity -- will permit smaller and lighter handsets, greater frequency reuse, greater spectral efficiency, greater capacity, and less cost to the consumer. Unlike cellular, PCS will permit home base stations that do not involve direct air-time charges and wireless switchboard PBX for local area networking applications such as businesses, campuses and other areas where large numbers of users are geographically dispersed. Cellular, of course, has greater range and other attributes associated with its greater transmitting power. By and large, PCS and cellular will serve different but complementary public needs. Both are important.

[12] PCS also shares certain characteristics with paging services, in that subscriber equipment will be small (wallet-sized) and inexpensive (as little as $75.00). PCS, however, will be more sophisticated than paging in the range of services it will offer to subscribers.

[13] PCS will share characteristics with cordless telephones in that it will permit non-wired communications that will be relatively inexpensive to consumers. PCS will differ from cordless telephones in the greater range of operation it will permit to consumers, and in its capacity to permit users to make and receive calls when away from home or office.

[14] PCS shares some characteristics of current intelligent network telephone services offered through certain public switched telephone networks ("PSTN") in that it will use large data bases, capable of identifying subscribers regardless of their whereabouts (thus allowing unlimited roaming) and capable of providing subscribers with a variety

telecommunications technology. This new technology may be defined as follows:[15/]

> *Personal Communications Services ("PCS").* A family of radiotelephone services permitting use of small, low-cost portable handsets, relying on high-capacity microcellular systems in which assigned spectrum is divided into discrete channels, which are assigned in groups to grids of low-power microcells covering PCS Service Areas, permitting extremely efficient frequency reuse.

PCS technologies range from CT-2 to personal communications networks ("PCN") employing intelligent network architecture. The first technologies likely to be deployed are CT-2 and Enhanced CT-2, which may be defined as follows:

> *Second Generation Cordless Telephone ("CT-2") System.* A PCS system consisting of public and private base stations, which connect with the local exchange network, and portable handset units which communicate directly with base stations. Voice transmissions are initiated by the portable unit, received by a base station, and then directed through the local exchange telephone network. Information received from the local exchange network is transmitted by a base station back to the portable unit that initiated the communication.
>
> *Enhanced CT-2.* CT-2 service that combines a paging unit with the portable CT-2 unit, allowing a CT-2 user to receive paging communications.

PCN, one advanced method of deployment of PCS operations, may be defined as follows:

---

of enhanced services (such as Caller ID, special ringing, etc.). It will differ from these networks, of course, in that it will offer these services free of wired limitations.

[15/] A complete set of APC's proposed definitions may be found at APC Amended Section 22.2 (Attachment A).

> *Personal Communications Network ("PCN").* A PCS system consisting of a contiguous network of public and private base stations, which connect with each other and with the local exchange telephone network, and portable handset units, which communicate directly with base stations. Voice, data or other transmissions from portable units are received by base stations and placed on the network. Information received from the network is transmitted by a base station to a portable unit. Portable units have the capacity both to initiate and receive communications through the network.

CT-2, rather than being considered a separate service with its own spectrum allocation and separate licensing, should be considered to be part of the PCS family of services. APC believes that each PCS licensee should have the opportunity to deploy CT-2 as an initial service or as a "basic" PCS service and to grow its eventual PCS offerings to encompass PCN and evolving PCS technologies. For reasons of spectral and economic efficiency and consumer satisfaction, PCS licensees should be afforded the spectrum capacity to offer a full range of services and should be permitted to employ a full range of technologies.

II. SPECTRUM ALLOCATION ISSUES

The 1850-1990 MHz band is among spectrum generally discussed for an international PCS allocation at the 1992 World Administrative Radio Conference of the International Telecommunication Union, thus promising economies of scale in equipment production if the Commission were to adopt this band for domestic PCS use. For this and other reasons, the

Commission should allocate this band to PCS on a co-primary basis with the operational fixed microwave service.[16/]

Preliminary indications from APC's propagation tests confirm that propagation characteristics of the 1850-1990 MHz band make it ideal for PCS use. Final results from APC's propagation analyses will be filed with APC's next two quarterly progress reports.

Frequencies other than those contained in the 1850-1990 MHz band are unsuitable for PCS operations. After careful examination, APC has determined that the three megahertz of spectrum available in the 900 MHz band (901-02, 930-31, and 940-41 MHz) would not provide sufficient capacity for a successful PCS system.[17/] The bands from 1710-1850 MHz and 2200-2290 MHz are allocated for federal government use.[18/] The 1990-2110 band is unavailable due to its heavy use for the broadcast auxiliary service. The 2110-2130 and 2160-2180 MHz bands are unavailable due to their heavy use for

---

[16/] Interference avoidance and sharing issues between PCS and the operational fixed service are be discussed below.

[17/] APC nonetheless intends to continue its PCS experiments using these frequencies. Test equipment likely will be available for use in this band several months before equipment that operates at higher frequencies. APC is anxious to explore market reaction to basic forms of PCS and will thus use the limited capacity in the 900 MHz band to begin its market studies.

[18/] If the Emerging Telecommunications Technologies Act of 1991 (H.R. 531, H.R. 1407 & S. 218) frees the 1710-1850 MHz band for PCS use, APC believes that band may be appropriate for allocation for PCS. That legislation, however, would not make that spectrum immediately available for PCS use.

common carrier microwave services. The 2130-2150 and 2180-2200 MHz bands are used for the private operational fixed microwave service and would not yield sufficient spectrum for PCS operations.[19/] Finally, the 2150-2160 MHz band is unavailable due to its allocation to wireless cable, which is expected to develop fully during this decade. Accordingly, the band from 1850-1990 MHz should be allocated to PCS.[20/]

III. TECHNICAL STANDARDS

APC believes that spectrum allocation decisions should precede resolution of any technical standardization issues. The leadership position of the United Kingdom in PCS development is a result of that government's decision to allocate spectrum for PCS in advance of setting technical standards. Postponing the allocation of frequencies for PCS

[19/] This would, however, be one location to which private operational fixed microwave service licensees displaced by PCS from the 1850-1990 MHz band could migrate.

[20/] APC has considered the concept of placing some quantity of the 140 MHz available to be allocated to PCS in this frequency band in reserve for a future, secondary PCS allocation. This reserve could encourage spectral efficiency and perhaps prevent future spectrum shortages akin to those occurring in certain cellular markets today. The difficulty with the reserve concept in PCS is that all available frequencies in some markets may be required to provide the flexibility necessary to avoid interference to microwave users. Some markets, moreover, could require active use of all available spectrum. A spectrum reserve could, however, be implemented on a flexible market-by-market basis when the details of PCS implementation become more clear. APC will further consider the feasibility of the spectrum reserve concept when it provides the Commission with its analysis of microwave usage patterns in major markets and this is likely to be a topic for consideration in the rule making.

until a consensus on technical standards has emerged would unnecessarily delay the development and implementation of PCS in the United States and inhibit the efforts of our telecommunications companies abroad. This result should be avoided by the Commission allocating spectrum to foster PCS development and, at a later date, determining minimal technical standards.

PCS systems can be configured using several distinct types of system architecture. Both TDMA and CDMA can be used to configure a state of the art, spectrally efficient PCS system. APC has determined that narrow-band TDMA channels can be "engineered around" private operational fixed microwave service ("OFS") licensees, thereby allowing PCS to share spectrum with OFS in a highly efficient and eminently workable manner. CDMA spread-spectrum uses might "overlay" OFS operations, although at this time APC believes that protection zones for existing OFS users will be required with both TDMA and CDMA configurations. As is described in APC's proposed rules, APC believes that interference protection to existing OFS users should be based on a carrier-to-interference criterion that will, in effect, create the necessary protection zones. See Attachment A at A-9 (APC Proposed Section 22.2002(c)).

Although APC recognizes the value of Commission-determined technical standards, APC believes it premature to select among or to define the technical parameters of the

various types of architecture available to configure PCS systems. As the Commission has noted, "the rate of change in digital techniques appears to be so great as to limit severely the value of such a proceeding."[21/] PCS technology is developing rapidly and experimental data are just beginning to be generated and evaluated. Premature technical standards would freeze PCS technology at an early stage in its evolution.[22/] Permitting PCS licensees to freely employ various types of system architecture will permit the flexible accommodation of OFS users necessary to avoid conflicts and expeditiously offer PCS service to the public in the markets where it is likely to be in the highest demand.

Of course, establishment of certain limited technical compatibility standards will be necessary. The time for such technical decisions, however, has not yet arrived. At this point, APC suggests in its proposed rules that the

---

21/ Liberalization of Technology and Auxiliary Service Offerings in the Domestic Public Cellular Radio Telecommunications Service, 3 F.C.C. Rcd. 7033, 7040 (1988).

22/ The Commission has made much the same conclusion on the issue of digital standard selection in the cellular area:

> We believe it would be premature for the Commission to intervene in the standards setting process. Industry is in a better position to evaluate the technical advantages and disadvantages of the various advanced cellular technologies and develop approaches to compatibility. Moreover, a Commission rule making is apt to delay this process. We note that development of the initial cellular standard through the rule making took several years.

Id. at 7040.

Commission merely reserve slots for technical standards to be determined.

IV. INTERFERENCE PROTECTION TO MICROWAVE USERS

The 1850-1990 MHz band is currently allocated to OFS. APC's experience in implementing its tests of PCS services indicates that PCS operations can be configured to avoid interference to OFS licensees. APC believes the vast majority of markets in which PCS will be introduced will not present intractable conflicts between PCS users and OFS users. In fact, APC's in-depth analysis of the Washington/Baltimore market indicates that OFS usage is highest in suburban areas and PCS usage will, most likely, be highest in central areas. This pattern is likely to be repeated in other markets.[23/]

After substantial study, APC has arrived at a configuration using TDMA architecture and narrow bandwidth channels that will operate around and not interfere with OFS licensees in many markets. APC also has engineered a configuration using CDMA spread-spectrum architecture. Millicom intends to test a PCS system using two 50 MHz

---

[23/] See Letter from W. Scott Schelle to Dr. Thomas Stanley, Chief Engineer, Second Progress Report of American Personal Communications (January 28, 1991). APC is in the process of analyzing patterns of microwave usage in other major United States markets, at least one of which (Chicago) appears upon first analysis to mirror the Washington/Baltimore pattern. APC will submit the results of its analysis during the course of the proposed rule making proceeding.

channels and CDMA spread-spectrum architecture.[24/] These tests will yield beneficial information, but initiation of a rule making proceeding need not await final resolution of interference concerns. APC is developing interference criteria in its experiments, and, as soon as possible during the course of the proposed rule making proceeding, APC will suggest a proposed rule incorporating carrier-to-interference criteria.

The Commission should allocate the 1850-1990 MHz band to PCS on a co-primary basis with grandfathered OFS licensees and on a primary basis to new OFS licensees. Any OFS licenses issued after commencement of this rule making should carry the specification that new OFS licensees have a secondary status to PCS in this band until the rule changes necessary to effectuate that status may be finalized. See Attachment A (Proposed Sections 2.106, 22.2002(c), 94.15(k)).

When necessary, APC favors permitting PCS licensees to reimburse OFS licensees for the reasonable costs of spectrum relocation or use of alternative technologies (such as fiber) when an intractable interference conflict between OFS and PCS is identified.[25/] APC has proposed a rule to

---

[24/] Millicom has been issued an experimental authorization for the Houston, Texas and Orlando, Florida markets. See FCC File No. 1343-EX-PL-90 (granted May 8, 1990).

[25/] This negotiation would occur only after PCS users are licensed by the Commission. APC opposes, in contrast, any plans to base licensing decisions on the ability of PCS applicants to purchase spectrum under a "marketplace" theory

accomplish this purpose. If the cost of OFS migration is too high, the market would determine that PCS is not as valuable as the current fixed microwave scheme. But, more likely, the expected low cost of limited migrations could be absorbed by PCS licensees, making possible a smooth, equitable and speedy launch of PCS in the 1850-1990 MHz band.

V. PCS MICROWAVE

Microwave transmission paths are needed to connect the numerous base stations that will be employed in PCS systems. The United Kingdom has set aside channels in the 37-39.5 GHz band for PCS microwave. APC believes that these frequencies are also suitable in the United States for this purpose and provide adequate capacity for future growth. Equipment that can operate in a cost-effective manner with antenna dishes of less than 12 inches in diameter is now commercially available for PCS microwave use.

---

that is, in reality, a private auction. This approach is discussed below with other licensing issues.

APC also opposes negotiation processes with OFS users that are not limited to reimbursement of the reasonable costs of OFS relocation. Such an unfettered "marketplace" approach would permit OFS users to exploit their possession of a government-granted monopoly license to the spectrum in question and demand monopoly rents in exchange for vacating that spectrum. The unequal status of OFS users and PCS licensees in such negotiations would prevent a proper economic valuing of the spectrum. That approach's "market" value for PCS would be entirely captured by existing OFS users exploiting monopoly rights rather than the PCS entrepreneurs bringing PCS service to the public.

There are currently no service rules for the 37-38.6 GHz band. The Commission should thus proceed to adopt regulations for these frequencies that make them suitable for PCS microwave. APC believes that the 38.6-39.5 GHz band can already be used for PCS microwave in this country under existing rules, although the Commission's operational requirements for these frequencies should be reviewed and, if necessary, revised to ensure their suitability for PCS microwave use.

VI. LICENSING ISSUES

Blanket Licensing for Base Stations. Because of the microcellular nature of PCS systems, hundreds of base stations are likely to be required in all markets. To ease administrative burdens on the Commission and PCS licensees, APC proposes a system of blanket licensing to cover all of a licensee's base stations.[26/] Such a system would require each applicant for a PCS authorization to submit a plan that would specify the number, type, emission range and potential locations of the base stations to be used to provide coverage of the licensee's market. The Commission would then issue a blanket license for the base stations specified in that plan.

[26/] As with cellular, mobile units would be far too numerous to license individually. Mobile units would be "considered to be associated with and covered by the authorization issued to the carrier serving the land mobile station." See Attachment A (proposed amendment of Section 22.9(c)).

If base stations were added, deleted, or otherwise altered after the issuance of the blanket license, the licensee would simply notify the Commission of such changes but would not be required to apply for additional licenses.[27/]

Selection of PCS Licensees. PCS will require massive start-up investments to lease hundreds of sites and install hundreds of base stations. Grid plans and all aspects of the technical arrangements will require great skill both to design and effectuate. Marketing, servicing, and billing costs are likely to be heavy due to expected high market penetration. Losses may be sustained over an initial period of years. These considerations require that only well-qualified and financially capable companies be licensed to provide PCS. In light of these demands, the Commission should use a licensing scheme that will (i) select the PCS applicant most likely to provide the best service and (ii) permit prompt inauguration of PCS services. Only a streamlined comparative hearing process would achieve these goals.[28/]

[27/] The Commission should adopt a mechanism to determine whether subsequent alterations to the base station plan move beyond good faith efforts to improve service. In its proposed rules, APC has suggested a distinction between "permissive" modifications to a licensee's base station plan and "major modifications" that require prior Commission consent. See Proposed Section 22.9(e) (Attachment A).

[28/] The cellular experience provides support for APC's proposal. Cellular applicants in first-round proceedings were required to submit specific implementation plans -- including technical, service, maintenance, pricing, and expansion issues -- that were tested in the evidentiary crucible of comparative hearings. The resulting licensees, by and large, quickly launched successful cellular services. When the Commission

The cellular experience demonstrates that the lottery process is inappropriate for an expeditious launch of a new telecommunications service. Despite the Commission's efforts, abuses plaguing the cellular lottery process continue to delay, rather than expedite, institution of service to the public.[29/] Lotteries make no effort to pick the most highly qualified applicant and can try to impose only minimal threshold standards. The very reason for the lottery -- expediting service to the consumer -- can be frustrated by the fact that lotteries attract many applicants with little or no capacity for, or interest in, building and operating a telecommunications system.[30/]

---

turned away from hearings and selected licensees by random, in contrast, this success in quick implementation of service was seldom repeated. Often, in fact, lottery winners simply sold authorizations to licensees in nearby large markets -- which had been subject to the rigors and discipline of the comparative hearing process.

[29/] See Amendment of the Commission's Rules for Rural Cellular Service, Further Notice of Proposed Rulemaking, 1 F.C.C. Rcd. 499, 499-500 (1986) (lottery procedures "encouraged speculative filings by insincere applicants," which "squandered Commission time and resources, delayed cellular processing and slowed cellular service to the public").

[30/] In 25 percent of 428 rural service area ("RSA") cellular markets, for example, the Commission disqualified the lottery winner for basic violations of the Commission's rules -- including financial deficiencies, alien ownership, or unlawful risk- sharing arrangements. Some 54 RSA winners, moreover, sold their construction permits prior to taking any effort to build a system. Often, more than two years passed from selection of an RSA licensee until basic construction of a cellular system.

Public auctions are also problematic. First, they are unlikely to select the best-qualified PCS licensees. Second, they would encourage bids based on excessive leverage, and that often leads to high consumer costs, poor service, and delays in service expansion and improvement. Third, requiring auction payments from PCS licensees would handicap PCS operators in marketing against other communications operators that were not burdened by large up-front payments. Fourth, the goal of generating revenue for the Treasury would be better served by using a licensing plan that will create a solid and vigorous PCS industry, leading to greater long-term excise, payroll tax, and income tax revenues.[31/]

Perhaps the least equitable manner in which PCS licensees could be selected would involve a private auction (or "marketplace approach") under which each PCS applicant would be required to negotiate with grandfathered existing microwave users within the proposed eligible band.[32/] PCS applicants would be required by federal law to purchase from these microwave users the right to use the spectrum in

---

[31/] As an additional complication, legislation would be required to permit spectrum auctions. Such proposed legislation has failed in the past and would, in any event, interpose substantial delay.

[32/] AT&T, Inc. and BellSouth Corporation propose such a "marketplace" approach. See AT&T Comments in PCS Inquiry at 2-5 (January 15, 1991).

question.[33/] As APC discusses above, a market-based approach to reimbursement of the reasonable costs of relocation of existing OFS users in congested markets -- after PCS licenses have been awarded -- would be equitable. A market-based approach to the licensing process itself, however, would impermissibly delegate Commission licensing decisions to the vagaries of the marketplace and to private parties. The "marketplace" private auction proposal suffers from each of the flaws of public auctions, and adds the concern that the funds from the auction would be directed away from the Treasury and to the private entities fortunate enough to hold Commission licenses in the appropriate spectrum bands.

APC's proposal for streamlined, expedited comparative hearings could tax the Commission's budget and personnel resources. However, APC has proposed substantial filing and hearing fees that could permit the PCS comparative process to finance itself.[34/] The specific steps described

---

[33/] This approach contains several anomalies. In markets where few or no microwave users exist, could new microwave users seek a license from the Commission at virtually no cost and then sell the right to use that spectrum to PCS service providers? If microwave users are concentrated in suburban areas but a PCS system would be deployed in the central area of a city, would an existing microwave user in the suburban outer ring be able to sell the spectrum it doesn't use in the market core?

[34/] PCS filing fees would permit the Commission to pay to borrow staff members and administrative law judges from other agencies. See Administrative Dispute Resolution Act, Pub. L. No. 101-552, 104 Stat. 2740 (to be codified at 5 U.S.C. § 583(d) (1990)). Those fees could also permit the Commission to procure the services of outside contractors to assist in the process as needed. See 48 C.F.R. §§ 1.103,